

MADAGASCAR



KEY WORDS

Madagascar Action Plan (MAP), SchoolNet Association of Madagascar, STEP, ICT Village, AVU Teacher Education Project, INASP, PERI, Jacaranda

1. OVERVIEW

Madagascar has begun to take the steps towards the promotion of ICTs for development with the adoption of its national ICT policy in 2004 and subsequently the adoption of an economic and social development policy referred to as the Madagascar Action Plan for 2007-2012 with promotes the expansion of ICT infrastructure and access in the country including the establishment of ICT centres in the schools. The country does not have a national ICT policy for education and levels of access to ICTs including connectivity is relatively low. There are a few initiatives in the country that attempts to promote access to and the use of ICTs to support learning and teaching. These however largely assume the form of extra-curricular projects.

2. INTRODUCTION

Madagascar has since the mid 1990s followed a World Bank- and IMF-led policy of privatization and liberalization which placed the country on a slow and steady growth path from an extremely low level. Agriculture, including fishing and forestry, is a mainstay of the economy, accounting for more than one quarter of GDP and employing 80% of the population. Exports of apparel have boomed in recent years primarily due to duty-free access to the US. Deforestation and erosion, aggravated by the use of firewood as the primary source of fuel, are serious concerns. Madagascar is plagued by periodic cyclones and floods, drought and locust infestation. Poverty reduction and combating corruption will be the centerpieces of economic policy for the next few years.

The country is classified as a Highly Indebted Poor Country by the World Bank. Children make up more than half of Madagascar's population of - half of whom live on less than \$1 a day¹.

Table 1: Basic Economic Indicators, Angola, 2005²

Population (2005)	18,600,000
Languages	Official languages: French and Malagasy. National language: Comorian, Antankarana, Southern Malagasy and Tsimehety.
2005 Economic activity (% of GDP)	Agriculture: 28.1; Industry: 15.9; Services: 56.0.
Human Development Index ³	0.509(2004)
Per capita Gross National Income	2000: 240 USD; 2004: 290 USD; 2005: 290 USD

3. EDUCATION SYSTEM

During the period of French colonial rule, the public school system comprised elite schools, based on the French model reserved for the children of French citizens (a status few Malagasy enjoyed); and indigenous schools for the Malagasy, which offered practical and vocational education but were not designed to train students for positions of leadership or responsibility. Reforms of the public school system designed to give the Malagasy more educational opportunities were initiated after World War II. At independence in 1960, the country had a system of education almost identical to that of France.

Education is compulsory for children between the ages of six and fourteen. The current education system provides primary schooling for 5 years, secondary education for 7 years and is divided into two parts: a junior secondary level of 4 years and a senior secondary level of 3 years. A vocational secondary school system, the *collège professionnelle* (professional college), is the equivalent of the junior secondary level; the *collège technique* (technical college), is the equivalent of the senior level⁴.

The University of Madagascar is the main institute of higher education. It maintains six separate, independent branches in Antananarivo, Antsiranana, Fianarantsoa, Toamasina, Toliara, and Mahajanga. The university system consists of several faculties, including law and economics, sciences, and letters and human sciences, and numerous schools that specialize in public administration, management, medicine, social welfare, public works, and agronomy. Official reports have criticized the excessive number of students at the six universities: a total of 40,000 in 1994, whereas the collective capacity is 26,000. Reform measures are underway to improve the success rate of students-- only 10 percent complete their programs, and the average number of years required to obtain a given degree is eight to ten compared with five years for African countries. In 2006 the total student population at the six public universities was 37,152.

Madagascar also has teacher-training colleges.

The gradual expansion of educational opportunities has had an impressive impact on Malagasy society, most notably in raising the literacy level of the general population. Only 39 percent of the population could be considered literate in 1966, but the United Nations Children's Fund (UNICEF) estimated that this number had risen to 50 percent at the beginning of the 1980s and to 80 percent in 1991. Similarly, primary school enrollment is nearly universal, a significant increase from the lower figure of 65 percent enrollment in 1965 (Madagascar had 13,000 public primary schools in 1994); 36 percent of the relevant school-age population attends secondary

school (there were 700 general education secondary schools and eighty *lycées* or classical secondary institutions) and 5 percent of the relevant school-age population attends institutions of higher learning. Girls have equal access with boys to educational institutions⁵.

Table 2: Education Indicators⁶

Enrolment in Primary Education (% gross)	134(2004)
Transition to Secondary	55(2003)
Enrolment in Tertiary Education (% gross)	3(2004)
Gender Parity Index (GPI)	0.96 in primary; 0.90 at university (2004)

Private tertiary institutions developed during the past decade. Most provide training in business, languages, management, and computer science. In 2005, the 50 recognized private higher institutions had 6,778 students (19.50 percent of the total). The total number of students in tertiary education is 3 percent of the college-age group, compared to 8 percent for Africa as a whole. As of 2006, 5% of the children from 3 to 5 years of age attended a pre-school establishment. This is considered one of the factors influencing the high drop out rate in first year of the primary school. The Malagasy Government began to reform the education system in 2003 with the launch of the national plan 'Education For All' (EPT). Progress has been made with the total number of pupils in primary education increasing from 1.7 million during the school year 1997-1998 to 3.7 million in 2005-2006. However, this success in terms of schooling remains relative insofar as the school retention rate and the internal effectiveness has yet to be significantly improved.

In the lower secondary school system, there is one public college for 18 primary schools. The percentage of young people age 11 to 14 years who attend secondary school is only 27%. It is among the weakest in the world and even lower than the average of sub-Saharan Africa. Too many students leave school early to work on family farms, small businesses and factories.

As of 2006, very few students enter upper secondary school. Those who enter have few options in their choice of study. The tertiary education sector is also insufficiently developed in Madagascar.

The rate of tertiary education enrolment is 3% (whereas 8% for Sub-Saharan African countries) with 260 students per 100,000 inhabitants. There is a very weak match between the programs offered and the needs of employers. Recently, there has been an increase in the number of private technical institutes; however, the quality and the organization of the programs provided require improvement. While the universities have begun to modify aspects of their structure and curricula, for the most part the changes are insufficient for the demands of a high growth economy. Finance is a critical problem for universities. Government commits 18.2% of its budget to education and only 9.4% of that to higher education—the equivalent of \$390 per student. Government policy of scholarships for most students (82% in 2006) without a means test has become an automatic budget liability, and 25% of recipients are from wealthy families. Students pay fees, but their contribution is limited. Attempts to increase fees or reduce scholarships would pose serious political risks. Added to these problems is the growing demand for access⁷.

As of 2006, in Madagascar approximately 48% of the population 15 year old and above are illiterate. There are more than 1 million young people from 11 to 17 years who are illiterate⁸.

4. INFRASTRUCTURE

According to the World Economic Forum *Global Information Technology Report*, Mozambique ranks 102nd out of 115 economies using the Networked Readiness Index (NRI) which measures the degree of preparation of a nation or community to participate in and benefit from ICT developments⁹.

Table 3: ICT Infrastructure Indicators, 2005¹⁰

Fixed line subscribers (2004)	58.7 per 1000 persons
Mobile Subscribers (2004)	334 per 1000 persons
Dial-up subscribers	10.5 per 1000 persons
Broadband subscribers (2004)	0.0
Internet users (2004)	90.0 per 1000 persons
Television broadcast stations	1(2001)
Radio stations	AM 2, FM 9(2001)

A new legislation passed in 1996 envisaged full liberalisation of the telecommunications sector, including a second national operator. 2003-2005 saw strong growth in the number of users of fixed and mobile telephones, an expansion of the telecommunications network, significant growth in the use of the internet and access to financial postal services. Nevertheless, the nation needs reliable international connections, at an affordable price to develop the economy and achieve regional integration. In 2005, only 8% of communes were connected by telephone and internet services. Moreover, the majority of those connections were via satellite with inadequate capacity and high costs. Also in 2005, only 23% of communes had access to television and 39% were covered by the mail service.

5. POLICY FRAMEWORK

5.1 Madagascar Action Plan 2007-2012¹¹

The Malagasy Government has adopted the Madagascar Action Plan for 2007-2012 which provides a set of 8 commitments relating to the economic and social upliftment of Malagasy society. These 8 commitments include

- Commitment 1: Responsible governance
- Commitment 2: Connected Infrastructure
- Commitment 3: Educational Transformation
- Commitment 4: Rural development and green revolution
- Commitment 5: Health, Family Planning and the Fight against HIV/SIDA
- Commitment 6: High Growth Economy
- Commitment 7: Cherish The Environment
- Commitment 8: National Solidarity

The commitment to connected infrastructure states the goal of ensuring all urban and rural areas to be covered by a reliable, accessible, affordable communication system, that there should be information flow to the regions through better access to radio and TV services and that partnerships with the private sector to provide new and better infrastructure will be promoted. The strategies to reach these goals include:

- Reduce high cost of mobile phone and international call
- Increase competition between mobile operators

- Develop wider access to ICTs
- Implement a national information technology action plan
- Expand phone coverage throughout the nation
- Expand postal coverage throughout the nation, including financial services
- Improve TV and radio media coverage.

The priority projects to give effect to these strategies have been listed below, with the Ministry of Telecommunications being given the responsibility to lead them:

- Connect Madagascar into an international optical fibre network
- Develop access to telecommunications services including ICT and Internet
- Set up a national backbone system that includes fibre optic network associated with major infrastructure projects (eg. roads)
- Create new ICT centers in each region (technopoles)
- Improve the system of distribution and the flow of dispatching of postal services
- Modernize the radio and television infrastructure and services based on new technologies
- Liberalize the telecommunication sector
- Implement Voice over IP for all
- Replace the national regulator OMERT by a new regulator ARTEC

Commitment number 3 related to education transformation states that the Malagasy government will create an education system with world class standards in quality and in effectiveness, which stimulates creativity and helps our students to actually transform their dreams into reality, and which provides Madagascar with the necessary human resources to become a competitive nation and a successful player in the world economy

One of the 7 education challenges highlighted in the MAP is the challenge to improve upper secondary, technical and vocational education. Here the strategies include transforming the curricula to integrate new subjects: ITC, economy, communications, languages and sciences with the creation of ICT centres in the schools as a stated priority project

5.2 National ICT Policy¹²

Madagascar adopted a National ICT Policy in 2004, the development of which was supported by the UNDP. The policy states the vision of the Malagasy government to improve ICT infrastructure in the country.

The policy does not have significant explicitly references to education except with reference to the establishment of research networks through the use of ICTs and to install ICT centres in schools.

6. MAJOR INITIATIVES

6.1 AVU Teacher Education Project¹³

The AVU in partnership with African Development Bank (AfDB) and NEPAD initiated a Teacher education program which commenced in 2006. The AfDB provided a grant of USD7.5million for the teacher education project and targets ten African countries. The UNDP later funded an additional amount of USD473, 477.00 to facilitate the inclusion of

additional Universities in Somalia. Madagascar is one of the 10 countries involved in the program.

The program revolves around the use of ICTs both in and across the curriculum, with a particular focus on mathematics and science education. The use of ICTs across the teaching curriculum will greatly contribute to improving the quality and increase the number of teachers, through programs that are delivered utilizing flexible, open, distance and e-learning methodologies at an affordable cost for diploma, undergraduate and graduate levels.

The specific objectives of the project is to enhance the capacity of teachers in the use of ICTs in teaching and learning, with a particular focus on mathematics and science, to develop the capacity of teachers to deliver ICT education - teaching ICT skills as a subject to secondary school pupils and to increase the number of mathematics and science teachers by expanding access to training through the ODeL initiative.

The project is targeting the development of 56 ODeL modules by early 2007, the content of which will be available in Portuguese, French and English. The authors are drawn from 12 institutions in the 10 countries that the AfDB and UNDP funding covers. The Université d'Antananarivo in Madagascar is one of these 12 institutions.

6.2 Centre d'Information et de Documentation Scientifique et Technique (CIDST)

The CIDST is the agency responsible for national research networking in Madagascar. CIDST has been closely working with various government ministries in setting up sectoral networks which could facilitate information exchange¹⁴.

6.3 ICT Village

The ICT Village is an integrated model designed with the support of the most important international organizations (including FAO, IFA, ITU, UNDESA, UNDP, UNESCO, the World Bank) that are part of the Advisory Board to the project). The project aims at creating a model of sustainable development that fights poverty at the community level through a wise use of the ICTs and of all new technologies (such as alternative clean energy, safe water, community renewal, etc.). The initiative was presented on the occasion of the WSIS 2005 and then the replication process started.

The first replica of the ICT Village model in Madagascar was in Sambaina. After two high level missions have been carried out, in November 2005 and June 2006, the inauguration of a digital classroom that will serve more than 600 students of the community, in order to accelerate the digital alphabetization of the community and create new jobs; a new community area accessible to all and a refurbished health presidium equipped for pregnant women and newborn children.

Partners on this project include the UN Public-Private Alliance for Rural Development (UNPPA) and representatives from all stakeholders: universities (University of Oklahoma, Politecnico di Milano, Università Cattolica del Sacro Cuore), companies (Microsoft, Siemens, Telespazio, Pianeta, Water B2B, etc.), civil society (above all the community of Sambaina, which has been fully involved in the whole process) and the Government of Madagascar.

The next steps for the Centre is to gain connectivity by acquiring the broadband satellite signal that can be received and distributed, bi-directionally. A wi-fi system, for the whole territory and teleconference equipment. A train the trainer program, offering broadband services and acting as an incubator and hub for economic activities

6.4 International Network for the Availability of Scientific Publications (INASP) | www.inasp.info

The INASP is a project that enables worldwide access to information and knowledge with particular emphasis on the needs of developing and transitional countries. They work with partners and networks around the world to encourage the creation and production of information, to promote sustainable and equitable access to information, to foster collaboration and networking, and to strengthen local capacities to manage and use information and knowledge. Their activities include

1. improving access to scientific and scholarly information
2. catalysing and support local publication and information exchange
3. strengthening local capacities to manage and use information and knowledge
4. fostering in-country, regional and international cooperation and networking
5. advising local organisations and funding agencies on ways to utilise information and publishing to achieve development goals

The INASP has a program called the Programme for the Enhancement of Research Information (PERI) which is a programme to support capacity building in the research sector in developing and transitional countries by strengthening the production, access and dissemination of information and knowledge. In Madagascar, the PERI program makes the following online resources available to researchers:

- Online Resources Available in Madagascar
- ICT Training in Madagascar
- Publishing Support in Madagascar

6.5 Jacaranda

The Jacaranda network comprises a number of institutions which share their bibliographic records, exchange documents, conduct joint training courses and sensitise decisions makers on the importance of information. The network is also involved in the publishing of catalogues on specific subjects.

6.6 Private Companies

A number of private of companies are also involved in ICT training, such as:

- Institut Supérieur de Technologies d'Antsiranana (ISTS) provides training in informatics and computer maintenance;
- Institut Supérieur Polytechnique de Madagascar (ISPM) has a programme in engineering; and
- Infocentre runs a three-year training courses in computer and information sciences.

6.7 SchoolNet Association of Madagascar

The SchoolNet Association of Madagascar was launched in 2005. Since then it has mainly been involved in activities supported by the International Institute for Communications and Development (IICD)'s Global Teenager Project which encourages learners from Madagascar to participate in online collaborative learning programs with young learners from all over the world.

SchoolNet Madagascar has also trained 220 learners and teachers to participate in the Mtandao Afrika program supported by Microsoft's Unlimited Potential Program. This program assumes the form of a contest which encourages learners and teachers across Africa, to form teams to develop educational websites.¹⁵.

6.8 Support Technology for Educators and Parents (STEP) in Madagascar¹⁶

The USAID supported a pilot project known as the STEP program in three provinces in Madagascar—Toliara, Fianarantsoa, and Tamatave for the period 2006 to 2008. STEP works with the Ministry of Education National and Scientific Research (MENRS) to build the capacity of its personnel to offer high-quality training and support to Madagascar's growing numbers of teachers and schools. Activities focus on three distinct but linked domains: (1) strengthening in-service teacher training; (2) increasing community support to local primary schools; and (3) strengthening local planning for teacher professional development. STEP allows the MENRS, USAID, and other partner non-governmental organizations (NGOs) to test and evaluate technology-based education support mechanisms that could add value on a nationwide scale as a means of maintaining educational quality and promoting a well-informed democracy. The program used context-appropriate technology-interactive radio instruction (IRI), community radio programs, and digital applications—as both the catalyst for action and the mechanism to build the capacity of MENRS personnel at central and decentralized levels.

6.9 Universities

The Université d'Antananarivo is the largest university in the country with over 30 libraries and documentation centres. The university hosts the Centre Syfed of AUPELF/UREF which is connected to the major ISP, Data Telecom Services (DTS), Internet hub. The Faculté des Sciences of the Université d'Antananarivo has a department specialising in mathematics and information sciences. The Ecole Nationale d'Informatique of the Université de Fianarantsoa graduates students in computer and information sciences; and

7. ENABLING AND CONSTRAINING FACTORS

The table below provides a brief overview of the current stage of development on ICTs in education in Madagascar.

Variables	Enabling	Constraining
Policy Framework & Implementation	Madagascar has a national ICT policy and an overall economic and social development policy with extensive reference to the development of ICT infrastructure in the country, including in schools.	There is no dedicated ICT in Education policy in Madagascar and there is limited references to education and the use of ICTs in the country's existing policies on ICT and economic and social development
Advocacy Leadership	Dedicated government ministries are assigned responsibility for priority projects for ICT infrastructure development	There is no dedicated leadership around ICTs in education in Madagascar even though there are a few projects, largely civil society trying to take the lead
Gender Equity re access to ICTs		There are no explicit references to gender equality and women's empowerment through the use of ICTs in general or in education
Infrastructure & Access		ICT infrastructure remains very limited within education institutions in particular
Collaborating mechanisms		There appears to be limited collaborative mechanism to promote ICTs in education in

		particular.
Human Resource Capacity		There remains a very limited layer of skilled personnel and champions at national level, concentrated around a network of skilled engineers and personnel developed at the CIEUM.
Fiscal Resources		There appears to be limited budget for ICTs in education and limited donor funding support in Madagascar as well
Learning content		Local contextually relevant learning content is currently lacking
Procurement regulations		
Attitudes	Within Government leadership at the highest levels have displayed a positive and supportive attitude towards ICTs for development in general	

CONTACTS

Dr Olivier ROBINSON, Director General, ICTs, Ministère des Télécommunications, des Postes et de la Communication, ROBINSON@WANADOO.MG

Lala Samuel Ranaivo Rakotondravelona, GTP Country Coordinator - Madagascar
lalaranaivos@yahoo.fr

ENDNOTES

-
- ¹ CIA World Fact Book 2007 <https://www.cia.gov/cia/publications/factbook/geos/za.html>
- ² CIA World Fact Book 2007 <https://www.cia.gov/cia/publications/factbook/geos/za.html>
- ³ Human Development Report 2006. Beyond Scarcity: Power, poverty and global water crisis: <http://hdr.undp.org/hdr2006/>
- ⁴ <http://www.country-studies.com/madagascar/education.html>
- ⁵ <http://www.country-studies.com/madagascar/education.html>
- ⁶ EFA Global Monitoring Report 2007: http://portal.unesco.org/education/en/ev.php-URL_ID=49591&URL_DO=DO_TOPIC&URL_SECTION=201.html
- ⁷ Fred M. Hayward and Hanitra Rasoanampoizina: Planning for Higher Education Changes in Madagascar
http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/Number46/p18_Hayward_Rasoanampoizina.htm
- ⁸ <http://www.madagascar-presidency.gov.mg/MAP/>
- ⁹ <http://www2.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme/Global+Information+Technology+Report.html>
- ¹⁰ CIA World Fact Book 2007 <https://www.cia.gov/cia/publications/factbook/geos/lt.html>
http://hdr.undp.org/hdr2006/statistics/countries/country_fact_sheets/cty_fs_LSO.html
- ¹¹ <http://www.madagascar-presidency.gov.mg/MAP/>
- ¹² http://africa.rights.apc.org/index.shtml?apc=21873s21844e_1
- ¹³ <http://72.14.235.104/search?q=cache:ehwLd82mwH0J:www.avu.org/documents/Fact-Sheet.pdf+ict+education+madagascar&hl=en&ct=clnk&cd=7&gl=za>
- ¹⁴ http://www.uneca.org/aisi/NICI/country_profiles/Madagascar/madaginfra.htm
- ¹⁵ <http://www.mtandao-afrika.org/English/Training06Madagascar.aspx>
- ¹⁶ International Education Systems of EDC.
<http://ies.edc.org/ourwork/project.php?id=3772&topic=13>